

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: Rendered ct model of the pharyngeal skeleton of *Ptomacanthus anglicus* viewed ventrally, against the mould of the surface of the specimen.

File Name: Supplementary Movie 2

Description: Rendered ct model of the pharyngeal skeleton of *Ptomacanthus anglicus* in isolate, rotating around its longitudinal axis.

File Name: Supplementary Software 1

Description: Data matrices and phylogenetic analysis command scripts.